

Department of Electrical and Electronic Engineering
Shantajal University of Science and Technology

Course Code: EEE485

Course Title: Cellular Mobile and
Satellite Communication

Duration: 30mins

Total marks: 20

Q1. Define (i) Elevation angle (ii) Azimuth angle
10

(iii) Nadir angle (iv) Apogee (v) Perigee.

Q2. What do you know about LEO and MEO? 10

Q3. What do you know about LEO and MEO? 10

Term Test
Course No: EEE 465
Course Title: Optoelectronics
Full Marks : 15 Time : 20 minutes

Answer all the questions

1. (a) The output spectrum of LASER is narrower than LED.....true or false.	1
(b) Direct band gap materials are used in optoelectronic industry. (T/F)	1
(c) Si is mostly used to produce optoelectronic devices. (T/F)	1
(d) With proper doping indirect to direct transition is possible. (T/F)	1
(e) Semiconductor laser is more powerful than Gas laser. (T/F)	1
2. (a) What is a degenerate semiconductor material?	3
(b) What is Fermi level energy? Draw the Fermi level for an intrinsic, n type and p type materials.	4
(c) Write few distinguishing characteristics of LCD display and LED display.	3

Shahjalal University of Science and Technology
Department of Electrical and Electronic Engineering
Course Code: EEE-491
Tutorial: 2 Marks: 20 Time: 25 minutes

1 Define (i) Mean heart rate (ii) Recovery heart rate (iii) Safety heart rate (iv) VVI (v) DDD	5
2 Write short notes on (i) A-V block (ii) Defibrillators	6
3 What are the differences between fixed rate pacemaker and triggered pacemaker?	4
4 Prove that $F \geq 2 \frac{60 - M}{(M)^2}$	5

1. Why does auxiliary power supply is not necessary for Phase sequence and voltage asymmetry relay? [1]
2. If Phase lack or wrong phase sequence how does intervention occur? Instant Intervention/ delay Intervention [1]
3. What do you mean by normally energized relay and normally de-energized relay? [1+1]
4. Write down the operating principle of current relay. [3]
5. Write down the function of NO,NC and INHIB terminal [1+1+1]
6. What are the two types of protection are provided by Maximum current three-phase relay? [1]
7. Why does current must be kept higher in Short circuit protection? [1]
8. What type of protection is provided by single-phase current relay? [1]
9. How does over current and under current produces in a transmission line? [1+1]
10. What do you mean by overload, under load and short-circuit protection? [1+1+1]
11. Write down the function of Hysteresis knob. [2]
12. What type of protection is provided by maximum and minimum three phase voltage relay? [1]
13. What do you mean by – i) Nominal Voltage ii) Maximum voltage threshold = 120% iii) Minimum voltage threshold = -50% [1+1+1]
14. Can you protect any electrical equipment from AC and DC current by using the same current relay that you used in lab? [1]
15. What do you mean by Asymmetry= 20% in Phase sequence relay? [1]
16. Write down the operating principle of CT and PT. [2+2]
17. What do you mean by balanced and unbalanced load? [1+1]
18. Write down the operating principle of detecting zero sequence current by using CT and Maximum Single phase relay? [3]
19. Write down the operating principle of detecting imbalance in current between wires by using a differential relay in a three-phase line. [3]